

RAW SEQUENCE LISTING

**The Biotechnology Systems Branch of the Scientific and Technical
Information Center (STIC) no errors detected.**

Application Serial Number: 10/554, 181
Source: PLT
Date Processed by STIC: 11/02/2005

ENTERED



PCT

RAW SEQUENCE LISTING

DATE: 11/02/2005

PATENT APPLICATION: US/10/554,181

TIME: 09:48:19

Input Set : A:\PTO.RJ.txt

Output Set: N:\CRF4\11022005\J554181.raw

```

3 <110> APPLICANT: FONDAZIONE CENTRO SAN RAFFAELE DEL MONTE TABOR
5 <120> TITLE OF INVENTION: LENTIVIRAL VECTORS CARRYING SYNTHETIC BI-DIRECTIONAL
PROMOTERS AND USES
6     THEREOF
8 <130> FILE REFERENCE: 81240PCT
C--> 10 <140> CURRENT APPLICATION NUMBER: US/10/554,181
C--> 11 <141> CURRENT FILING DATE: 2005-10-21
13 <160> NUMBER OF SEQ ID NOS: 8
15 <170> SOFTWARE: PatentIn version 3.1
17 <210> SEQ ID NO: 1
18 <211> LENGTH: 20
19 <212> TYPE: DNA
20 <213> ORGANISM: Artificial Sequence
22 <220> FEATURE:
23 <223> OTHER INFORMATION: primer
25 <220> FEATURE:
26 <221> NAME/KEY: misc_feature
27 <222> LOCATION: (1)..(20)
28 <223> OTHER INFORMATION: LV forward primer
31 <400> SEQUENCE: 1
32 tgaaagcgaa agggaaacca                                20
35 <210> SEQ ID NO: 2
36 <211> LENGTH: 15
37 <212> TYPE: DNA
38 <213> ORGANISM: Artificial Sequence
40 <220> FEATURE:
41 <223> OTHER INFORMATION: primer
43 <220> FEATURE:
44 <221> NAME/KEY: misc_feature
45 <222> LOCATION: (1)..(15)
46 <223> OTHER INFORMATION: LV reverse primer
49 <400> SEQUENCE: 2
50 ccgtgcgcgc ttcag                                      15
53 <210> SEQ ID NO: 3
54 <211> LENGTH: 18
55 <212> TYPE: DNA
56 <213> ORGANISM: Artificial Sequence
58 <220> FEATURE:
59 <223> OTHER INFORMATION: probe
61 <220> FEATURE:
62 <221> NAME/KEY: misc_feature
63 <222> LOCATION: (1)..(18)
64 <223> OTHER INFORMATION:
67 <220> FEATURE:

```

RAW SEQUENCE LISTING

DATE: 11/02/2005

PATENT APPLICATION: US/10/554,181

TIME: 09:48:19

Input Set : A:\PTO.RJ.txt

Output Set: N:\CRF4\11022005\J554181.raw

```

68 <221> NAME/KEY: misc_feature
69 <222> LOCATION: (1)..(18)
70 <223> OTHER INFORMATION: LV probe
W--> 73 <400> 3
74 ctctctcgac gcaggact 18
77 <210> SEQ ID NO: 4
78 <211> LENGTH: 9613
79 <212> TYPE: DNA
80 <213> ORGANISM: Artificial Sequence
82 <220> FEATURE:
83 <223> OTHER INFORMATION: plasmid
85 <220> FEATURE:
86 <221> NAME/KEY: misc_feature
87 <222> LOCATION: (1)..(9613)
88 <223> OTHER INFORMATION: plasmid containing the lentiviral vector construct RRL-MA1-
lucif/
89 GFP
92 <400> SEQUENCE: 4
93 caggtggcac ttttcgggga aatgtgcgcg gaacccctat ttgtttatTT ttctaaatac 60
95 attcaaatat gtatccgctc atgagacaat aaccctgata aatgcttcaa taatattgaa 120
97 aaaggaagag tatgagtatt caacatttcc gtgtcgccct tattcccttt tttgcggcat 180
99 tttgccttcc tgtttttgct caccagaaaa cgctggtgaa agtaaaagat gctgaagatc 240
101 agttgggtgc acgagtgggt tacatcgaac tggatctcaa cagcggtaag atccttgaga 300
103 gttttcgccc cgaagaacgt tttccaatga tgagcacttt taaagttctg ctatgtggcg 360
105 cgggtattatc ccgtattgac gccgggcaag agcaactcgg tcgccgcata cactattctc 420
107 agaatgactt gggtgagtac tcaccagtca cagaaaagca tcttacggat ggcatgacag 480
109 taagagaatt atgcagtgtc gccataacca tgagtataaa cactgcggcc aacttacttc 540
111 tgacaacgat cggaggaccg aaggagctaa ccgctttttt gcacaacatg ggggatcatg 600
113 taactcgctt tgatcggttg gaaccggagc tgaatgaagc cataccaaac gacgagcgtg 660
115 acaccacgat gcctgtagca atggcaacaa cgttgcgcaa actattaact ggcgaaactac 720
117 ttactctagc ttcccggcaa caattaatag actggatgga ggcggataaa gttgcaggac 780
119 cacttctgcg ctcgccctt ccggctggct gggtttattg tgataaatct ggagccgggtg 840
121 agcgtgggtc tcgcgggtatc attgcagcac tggggccaga tggtaagccc tcccgtatcg 900
123 tagttatcta cagcagggg agtcaggcaa ctatggatga acgaaataga cagatcgctg 960
125 agataggtgc ctactgatt aagcattggg aactgtcaga ccaagtttac tcatatatac 1020
127 tttagattga tttaaaactt catttttaat ttaaaaggat ctagggtgaag atcctttttg 1080
129 ataatctcat gaccaaaatc ccttaacgtg agttttcgtt cactgagcg tcagaccccg 1140
131 tagaaaagat caaaggatct tcttgagatc ctttttttct gcgcgtaatc tgctgcttgc 1200
133 aaacaaaaaa accaccgcta ccagcgggtg tttgtttgcc ggatcaagag ctaccaactc 1260
135 tttttccgaa ggtaactggc ttcagcagag cgcagatacc aaatactgtc cttctagtgt 1320
137 agccgtagtt aggccaccac ttcaagaact ctgtagcacc gcctacatac ctcgctctgc 1380
139 taatcctgtt accagtggct gctgccagtg gcgataagtc gtgtcttacc gggttggact 1440
141 caagacgata gttaccggat aaggcgcagc ggtcgggctg aacggggggg tcgtgcacac 1500
143 agcccgctt ggagcgaacg acctacaccg aactgagata cctacagcgt gagctatgag 1560
145 aaagcggcac gcttcccga gggagaaagg cggacaggta tccggtaagc ggcagggtcg 1620
147 gaacaggaga gcgcacgagg gagcttccag ggggaaacgc ctggtatctt tatagtcctg 1680
149 tcgggtttcg ccacctctga cttgagcgtc gattttttgt atgctcgtca ggggggcgga 1740
151 gcctatggaa aaacgccagc aacgcggcct ttttacgggt cctggccttt tgctggcctt 1800
153 ttgctcacat gttctttcct gcgttatccc ctgattctgt ggataaccgt attaccgcct 1860
155 ttgagtgagc tgataccgct cgccgcagcc gaacgaccga gcgcagcgag tcagtgagcg 1920

```

RAW SEQUENCE LISTING

DATE: 11/02/2005

PATENT APPLICATION: US/10/554,181

TIME: 09:48:19

Input Set : A:\PTO.RJ.txt

Output Set: N:\CRF4\11022005\J554181.raw

```

157 aggaagcgga agagcgccca atacgcaaac cgctctccc cgcgcgttgg ccgattcatt 1980
159 aatgcagctg gcacgacagg tttcccgact ggaaagcggg cagtgagegc aacgcaatta 2040
161 atgtgagtta gctcactcat taggcacccc aggcctttaca ctttatgctt ccggctcgta 2100
163 tgttgtgtgg aattgtgagc ggataacaat ttcacacagg aaacagctat gaccatgatt 2160
165 acgccaagcg cgcaattaac cctcactaaa gggaacaaaa gctggagctg caagcttaat 2220
167 gtagtcttat gcaatactct tgtagtcttg caacatggta acgatgagtt agcaacatgc 2280
169 cttacaagga gagaaaaagc accgtgcatg ccgattgggtg gaagtaaggt ggtacgatcg 2340
171 tgccttatta ggaaggcaac agacgggtct gacatggatt ggacgaacca ctgaattgcc 2400
173 gcattgcaga gatattgtat ttaagtgcct agctcgatac aataaacggg tctctctggg 2460
175 tagaccagat ctgagcctgg gagctctctg gctaactagg gaaccactg cttagcctc 2520
177 aataaagctt gccttgagtg cttcaagtag tgtgtgcccg tctgttgtgt gactctggta 2580
179 actagagatc cctcagaccc ttttagtcag tgtggaaat ctctagcagt ggcgcccga 2640
181 cagggacctg aaagcgaaag ggaaaccaga gctctctcga cgcaggactc ggcttgctga 2700
183 agcgcgcacg gcaagaggcg aggggcggcg actggtgagt acgcaaaaaa ttttgactag 2760
185 cggaggctag aaggagagag atgggtgcga gagcgtcagt attaagcggg ggagaattag 2820
187 atcgcgatgg gaaaaaattc ggttaaggcc aggggggaaag aaaaaatata aattaaaaca 2880
189 tatagtatgg gcaagcaggg agctagaacg attcgagtt aatcctggcc tgttagaaac 2940
191 atcagaaggc tgtagacaaa tactgggaca gctacaacca tcccttcaga caggatcaga 3000
193 agaacttaga tcattatata atacagtagc aacctctat tgtgtgcac aaaggataga 3060
195 gataaaagac accaaggaag ctttagacaa gatagaggaa gagcaaaaac aaagtaagac 3120
197 caccgcacag caagcggccg ctgatcttca gacctggagg aggagatatg agggacaatt 3180
199 ggagaagtga attatataaa tataaagtag taaaattga accattagga gtagcaccca 3240
201 ccaaggcaaa gagaagagtg gtgcagagag aaaaaagagc agtgggaata ggagctttgt 3300
203 tccttgggtt cttgggagca gcaggaagca ctatgggcgc agcctcaatg acgctgacgg 3360
205 tacaggccag acaattattg tctggtatag tgcagcagca gaacaatttg ctgagggcta 3420
207 ttgaggcgca acagcatctg ttgcaactca cagtctgggg catcaagcag ctccaggcaa 3480
209 gaatcctggc tgtggaaaga tacctaaagg atcaacagct cctggggatt tggggttgct 3540
211 ctggaaaact catttgcacc actgctgtgc cttggaatgc tagttggagt aataaatctc 3600
213 tggaacagat ttggaatcac acgacctgga tggagtggga cagagaaatt aacaattaca 3660
215 caagcttaat acactcctta attgaagaat cgcaaaacca gcaagaaaag aatgaacaag 3720
217 aattattgga attagataaa tgggcaagtt tgtggaattg gtttaacata acaattggc 3780
219 tgtggtatat aaaattattc ataattgatg taggaggctt ggtaggttta agaattagtt 3840
221 ttgctgtact ttctatagtg aatagagtta ggcagggata ttcaccatta tcgtttcaga 3900
223 cccacctccc aaccccgagg ggacccgaca ggcccgaagg aatagaagaa gaaggtggag 3960
225 agagagacag agacagatcc attcgattag tgaacggatc tcgacgggat cggttaactt 4020
227 ttaaaagaaa aggggggatt ggggggtaca gtgcagggga aagaatagta gacataatag 4080
229 caacagacat acaactaaa gaattacaaa aacaaattac aaaaattcaa aattttatcg 4140
231 atcacgagac tagcctcgag agatctgac ataactcagc ataccacatt tgtagagggt 4200
233 ttacttgctt taaaaaacct cccacacctc cccctgaacc tgaaacataa aatgaatgca 4260
235 attgttgttg ttaacttggt tattgcagct tataatgggt acaaataagg caatagcatc 4320
237 acaaatttca caaataaggc atttttttca ctgcattcta gttttgggtt gtccaaactc 4380
239 atcaatgtat cttatcatgt ctggatctca aatccctcgg aagctgcgcc tgtcttaggt 4440
241 tggagtgata catttttatc actttttacc gtctttggat taggcagtag ctctgacggc 4500
243 cctcctgtct taggttagtg aaaaatgtca ctctcttacc cgtcattggc tgtccagctt 4560
245 agctcgcagg ggaggtgggtc tggatcctct agaattacac ggcgatcttt ccgcccttct 4620
247 tggcctttat gaggatctct ctgatttttc ttgcgtcgag ttttccggta agacctttcg 4680
249 gtacttcgtc cacaacaca actcctccgc gcaacttttt cgcgggttgtt acttgactgg 4740
251 ccacgtaatc cacgatctct ttttccgtca tcgtctttcc gtgctccaaa acaacaacgg 4800
253 cggcgggaag ttcaccggcg tcatcgtcgg gaagacctgc gacacctgcg tcgaagatgt 4860

```

RAW SEQUENCE LISTING

DATE: 11/02/2005

PATENT APPLICATION: US/10/554,181

TIME: 09:48:19

Input Set : A:\PTO.RJ.txt

Output Set: N:\CRF4\11022005\J554181.raw

```

255 tgggggtgttg gagcaagatg gattccaatt cagcggggagc cacctgatag cctttgtact 4920
257 taatcagaga cttcaggcgg tcaacgatga agaagtgttc gtcttcgtcc cagtaagcta 4980
259 tgtctccaga atgtagccat ccattccttg caatcaaggc gttggctcgt tccggattgt 5040
261 ttacataacc ggacataatc ataggacctc tcacacacag ttccgctctt tgattaacgc 5100
263 ccagcgtttt cccggatatc agatccacaa ccttcgcttc aaaaaatgga acaactttac 5160
265 cgaccgcgcc cggtttatca tccccctcgg gtgtaatcag aatagctgat gtagtctcag 5220
267 tgagcccata tcttgccctg atacctggca gatggaacct cttggcaacc gcttccccga 5280
269 ctcccttaga gaggggagcg ccaccagaag caatttcgtg taaattagat aaatcgtatt 5340
271 tgtcaatcag agtgcttttg gcgaagaagg agaatagggt tggcaccagc agcgcacttt 5400
273 gaatcttgta atcctgaagg ctctcagaa acagctcttc ttcaaatac tacattaaga 5460
275 cgactcgaaa tccacatatc aaatatccga gtgtagtaaa cattccaaaa ccgtgatgga 5520
277 atggaacaac acttaaaatc gcagtatccg gaatgatttg attgccaaaa ataggatctc 5580
279 tggcatgcga gaatctcagc caggcagttc tatgaggcag agcgacacct ttaggcagac 5640
281 cagtagatcc agaggagtgc atgatcagtg caattgtctt gtccctatcg aaggactctg 5700
283 gcacaaaatc gtattcatta aaaccgggag gtagatgaga tgtgacgaac gtgtacatcg 5760
285 actgaaatcc ctggtaatcc gttttagaat ccatgataat aatTTTTTgg atgattggga 5820
287 gctTTTTTTg caggttcaaa atTTTTTgca acccctTTTT ggaaacgaac accacggtag 5880
289 gctgcgaaat gcccatactg ttgagcaatt caggttcatt ataaatgtcg ttccggggcg 5940
291 caactgcaac tccgataaat aacgcgcca acaccggcat aaagaattga agagagtttt 6000
293 cactgcatac gacgattctg tgatttgtat tcagcccata tcgtttcata gcttctgcca 6060
295 accgaacgga catttcgaag tactcagcgt aagtgatgtc cacctcgata tgtgcatctg 6120
297 taaaagcaat tgttccagga accagggcgt atctcttcat agccttatgc agttgctctc 6180
299 cagcggttcc atcttccagc ggatagaatg gcgcggggcc tttctttatg tttttggcgt 6240
301 ctcccatggg gaattccgcg gaggtggat cgggtcccgt gtcttctatg gaggtcaaaa 6300
303 cagcgtggat ggcgtctcca ggcgatctga cggttcacta aacgagctct gcttatatag 6360
305 gcctccacc gtacacgcct accctcgaga agcttgatat cgaattccca cggggttggg 6420
307 gttgcgcctt ttccaaggca gccctgggtt tgcgcaggga cgcggctgct ctgggcgtgg 6480
309 ttccgggaaa cgcagcggcg ccgacctgg gtctcgaca ttcttcacgt ccgttcgcag 6540
311 cgtcaccggg atcttcgcgc ctaccttgt gggccccccg gcgacgcttc ctgctccgcc 6600
313 cctaagtcgg gaaggttctt tgcggttcgc ggcgtgccgg acgtgacaaa cgggaagccgc 6660
315 acgtctcact agtacctcg cagacggaca gcgccaggga gcaatggcag cgcgccgacc 6720
317 gcgatgggct gtggccaata gcggctgctc agcggggcgc gccgagagca gcggccggga 6780
319 agggggcggg cgggaggcgg ggtgtggggc ggtagtgtgg gccctgttcc tgcccgcgcg 6840
321 gtgttccgca ttctgcaagc ctccggagcg cacgtcggca gtcggctccc tcgttgaccg 6900
323 aatcaccgac ctctctcccc agggggatcc accggtcgcc accatggtga gcaaggcgga 6960
325 ggagctgttc accggggtgg tgcccatcct ggtcgagctg gacggcgacg taaacggcca 7020
327 caagttcagc gtgtccggcg agggcgaggg cgatgccacc tacggcaagc tgacctgaa 7080
329 gttcatctgc accaccgga agctgccccg gccctggccc accctcgtga ccacctgac 7140
331 ctacggcggt cagtgttca gccgtacct cgaccacatg aagcagcacg acttcttcaa 7200
333 gtccgccatg ccggaaggct acgtccagga gcgcaccatc ttcttcaagg acgacggcaa 7260
335 ctacaagacc cgcgcggagg tgaagtctga gggcgacacc ctggtgaacc gcatcgagct 7320
337 gaagggcatc gacttcaagg aggacggcaa catcctgggg cacaagctgg agtacaacta 7380
339 caacagccac aacgtctata tcatggccga caagcagaag aacggcatca aggtgaactt 7440
341 caagatccgc cacaacatcg aggacggcag cgtgcagctc gccgacct accagcagaa 7500
343 caccctcacc ggcgacggcc ccgtgctgct gcccgacaac cactacctga gcaccagtc 7560
345 cgccttgagc aaagacccca acgagaagcg cgatcacatg gtctgtctgg agttcgtgac 7620
347 cgcgcgggg atcactctcg gcatggacga gctgtacaag taaagcggcc gcgtcgacaa 7680
349 tcaacctctg gattacaaaa tttgtgaaag attgactggt attcttaact atgttgctcc 7740
351 ttttacgcta tgtggatacg ctgctttaat gcctttgtat catgctattg cttcccgat 7800

```

RAW SEQUENCE LISTING

DATE: 11/02/2005

PATENT APPLICATION: US/10/554,181

TIME: 09:48:19

Input Set : A:\PTO.RJ.txt

Output Set: N:\CRF4\11022005\J554181.raw

```

353 ggcttttcatt ttctcctcct tgtataaatc ctggttgctg tctctttatg aggagttgtg 7860
355 gcccgttgctc aggcaacgtg gcgtgggtgtg cactgtgttt gctgacgcaa cccccactgg 7920
357 ttgggggcatt gccaccacct gtcagctcct ttccgggact ttccgtttcc cctccctat 7980
359 tgccacggcg gaactcatcg ccgcctgcct tgcccgtgc tggacagggg ctccggtgtt 8040
361 gggcactgac aattccgtgg tgttgctggg gaagctgacg tcctttccat ggctgctcgc 8100
363 ctgtgttgcc acctggattc tgcgcgggac gtccttctgc tacgtccctt cggccctcaa 8160
365 tccagcggac ctctcttccc gcggcctgct gccggctctg cggcctctt cgcgtcttcg 8220
367 ccttcgcccc cagacgagtc ggatctccct ttgggcccgc tccccgcctg gaattcgagc 8280
369 tcggtacctt taagaccaat gacttacaag gcagctgtag atcttagcca ctttttaaaa 8340
371 gaaaaggggg gactggaagg gctaattcac tccaacgaa gacaagatct gctttttgct 8400
373 tgtactgggt ctctctgggt agaccagatc tgagcctggg agctctctgg ctaactaggg 8460
375 aaccactgc ttaagcctca ataaagcttg ccttgagtgc ttcaagtagt gtgtgcccg 8520
377 ctgttgtgtg actctggtaa ctagagatcc ctcagacct tttagtcagt gtggaaaatc 8580
379 tctagcagta gtagttcatg tcactcttatt attcagtatt tataacttgc aaagaaatga 8640
381 atatcagaga gtgagaggaa cttgtttatt gcagcttata atggttacaa ataaagcaat 8700
383 agcatcacia atttcacaaa taaagcattt ttttactgc attctagttg tggtttgtcc 8760
385 aaactcatca atgtatctta tcagtgtctg ctctagctat cccgccccct actccgcccc 8820
387 gttccgcccc ttctccgccc catggctgac taattttttt tatttatgca gaggccgagg 8880
389 ccgcctcggc ctctgagcta ttccagaagt agtgaggagg cttttttgga ggccctaggct 8940
391 tttgcgtcga gacgtaccca attcgccta tagtgagtcg tattacgcgc gctcactggc 9000
393 cgtcgtttta caacgtcgtg actgggaaaa ccttggcgtt acccaactta atcgccttgc 9060
395 agcacatccc cttttcgcca gctggcgtaa tagcgaagag gcccgccacc atcgccttcc 9120
397 ccaacagttg cgcagcctga atggcgaatg gcgcgacgcg cctgtagcgc gcgcattaag 9180
399 cgcggcgggt gtggtggtta cgcgcagcgt gaccgctaca cttgccagcg ccctagcgcc 9240
401 cgtccttttc gctttcttcc ctctctttct cgccacgttc gccggctttc cccgtcaagc 9300
403 tctaaatcgg gggctccctt tagggttccg atttagtgct ttacggcacc tcgaccccaa 9360
405 aaaacttgat tagggtgatg gttcacgtag tgggccatcg ccctgataga cggtttttcg 9420
407 ccctttgacg ttggagtcca cgctctttaa tagtggaactc ttgttccaaa ctggaacaac 9480
409 actcaaccct atctcggctc attcttttga tttataaggg attttgccga tttcggccta 9540
411 ttggttaaaa aatgagctga ttttaacaaa atttaacgcg aattttaaca aaatattaac 9600
413 gtttacaatt tcc 9613

```

416 <210> SEQ ID NO: 5

417 <211> LENGTH: 9380

418 <212> TYPE: DNA

419 <213> ORGANISM: Artificial Sequence

421 <220> FEATURE:

422 <223> OTHER INFORMATION: plasmid.

424 <220> FEATURE:

425 <221> NAME/KEY: misc_feature

426 <222> LOCATION: (1)..(9380)

427 <223> OTHER INFORMATION:

430 <220> FEATURE:

431 <221> NAME/KEY: misc_feature

432 <222> LOCATION: (1)..(9380)

433 <223> OTHER INFORMATION: plasmid containing the lentiviral vector construct CCL-MA1-

GFP/de

434 ltaLNGFR

W--> 437 <400> 5

438 cagggtggcac ttttcgggga aatgtgcgcg gaacccttat ttgtttatct ttctaaatac 60

440 attcaaatac gtatccgctc atgagacaat aaccctgata aatgcttcaa taatattgaa 120

VERIFICATION SUMMARY

DATE: 11/02/2005

PATENT APPLICATION: US/10/554,181

TIME: 09:48:20

Input Set : A:\PTO.RJ.txt

Output Set: N:\CRF4\11022005\J554181.raw

L:10 M:270 C: Current Application Number differs, Replaced Current Application Number
L:11 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:73 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:3,Line#:64
L:437 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:5,Line#:427
L:774 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:6,Line#:764
L:1121 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:7,Line#:1111
L:1462 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:8,Line#:1452